

# Intro To Brewing With Spice



## Spicing It Up In The Brew Room

### Let's Get Spicy

Flavoring a beer with spice can go one of two ways, you can either use the flavoring to define the beer or use the flavoring to complement the base beer flavor. Before making any decisions, take a few minutes to carefully think through what you want to accomplish. Try to taste the beer in your mind, not just the taste of the individual ingredients, but of how all the flavors each ingredient contributes integrate together. Having too many flavors fighting for your palate's attention makes for a confusing and unfocused experience, often creating a muddled mess.

Think with focus and then go for it!

Before the discovery of hops, spices were used for bittering in beer and for balancing its malt aroma. Bay leaf, juniper, and seeds of the umbel family (Apiaceae) such as anise, caraway, coriander, dill, and fennel were frequently used for bittering. Carrot and parsley belong to this group as well. These seeds not only taste bitter but also impart significant aromas and anise/coriander/licorice flavors.

Other spices add a chili-like sharpness to the brew. These include not only your typical chili peppers; but also black, white and green peppercorns, ginger, quassia, and grains of paradise.

Next is the group of "true" spices, each with their own unique flavor, which are typically used to add aroma and flavor. There is allspice, cardamom, cinnamon, clove, licorice, mace/nutmeg, and star anise, as well as the zest of different citrus fruits. Many of these spices have been and still are particular favorites for Christmas cooking, baking, and beer making.

Finally, a few nontraditional spices have been used by many brewers to flavor beer. Vanilla, for example, has become commonplace in certain beer styles. On the more experimental end of the spectrum is a saffron.

### So Many Ways To Spice It Up

There are essentially five different ways to add flavorings to your brew. Each gives different effects with different spices.

1. Add the spice to the mash, if you're brewing with grain. This method provides a deep spice flavor, but usually no aroma at all. You would add the spice in with the grist or as a later addition to the mash as is often done with darker specialty grains.
2. Add the spice to the kettle, whether boiling malt extracts or boiling down your mash runoff. This will extract some aroma along with the flavors. The longer the spice is in the boil, the less its aromatics will remain, just like hops.
3. Spices can be added as "dry hops." Depending on your style, this means adding the spice in the last two minutes of the boil, at kettle knockout (when you turn off the heat to stop the boil), or in the fermenter (primary or secondary). This will not add as much flavor as the first two uses, but the aromatic qualities of the spice will be better preserved.

A word of caution here: Large pieces of spices or fruits can potentially clog your airlock or blowoff tube. The vast majority of spices used for brewing purposes can (and probably should) be crushed or ground, regardless of when you plan to add them during your brewing process. You'll always get more flavor from freshly ground spices than from either whole or commercially pre-ground spices.

4. Much attention has recently been given to the idea of tinctures and tisanes when using spices. For delicate spices, these are a great methods, but does require some forethought. For more on tinctures and tisanes, see the side bar article titled "Tinctures And Tisanes And Titrations, Oh My!"

5. Another option, although limited by availability and price, is the use of liqueurs and syrups in lieu of priming sugar. This is more applicable with fruit flavorings, but there are a few herbed liqueurs or syrups that make for an interesting combination. Exercise caution when going this route as you will need to figure out just how much sugar is in the liqueur (by its specific gravity, more or less). It will also add slightly to the alcohol content of your beer. Typically, a 12- to 15-ounce bottle of liqueur will need about 1/4 cup more priming sugar to adequately prime five gallons of beer and may well crank up your ABV by 1 - 1.5%.

# A (Very) Brief History Of Spices In Beer

Ever hear of a Gruit beer? Chances are good that you probably haven't heard of them. Gruit beers are beers that are brewed without the addition of hops, or at least domesticated hops. For around 8,000 years, spices have been a part of the brewing process. Like hops, the infusion of wild and medicinal herbs provided flavor and bitterness to the beer as well as antiseptic properties to keep unwanted microorganisms at bay. The use of hops in the brewing process is relatively new (within the last 1,000 years). While Rhineheitsgebot, the German Purity law first implemented in Bavaria, stipulated that hops be one of the only allowed ingredients since 1516, brewers in other regions have continued using many other spices and flavoring agents along with their grains and other fermentables until the 19th century. Unfortunately, Prohibition in the U.S. further erased elements of spice usage in the brewing process. Today, however, the use of spices in the brewing process is being revived and experiencing a bit of a renaissance. In many Belgian beer styles, the use of spices remained popular to this day, and spices are once again being used by many modern craft brewers.

## Spice, The Variety Of Life

Some of the traditional spices used over the centuries include heather and gorse (in the highlands of Scotland); spruce needles (in England and the American colonies); juniper (in Northern Europe, particularly along the Baltic Sea); coriander and cumin seed (Belgium); woodruff (in Berliner Weissbiers) and yarrow, nettle, thyme, nutmeg, basil, and rosemary (in English and Irish country ales). The list of spices that have been historically used is probably as long and as varied as the history of brewing itself.

Today, ingredients such as licorice, anise, chili peppers, and orange peel can be found in commercially produced specialty beers, particularly as the American craft-brewing industry has followed homebrewers' lead into more daring and innovative brewing.

## Tinctures and Tisanes and Titrations, Oh My!

### Tinctures Vs Tisanes

Simply put, a tincture is an extract typically made using vodka or another neutral grain alcohol while a tisane is an extract made using boiling water. The use of tinctures and tisanes can allow you to consistently dial in your flavor from one batch to the next.

The process for making a tincture is easy, but does require that you plan ahead. A general starting point is to begin with 4 oz. of a clean neutral spirit in a sealable vessel (like a mason jar), then roughly crush an ounce of your desired flavoring and mix into the spirit. Allow it to steep for at least one week and give it a shake at least once or twice a day to speed up the extraction process. You can make a tincture faster through the use of a sous vide immersion circulator and heating a water bath to 130-135 °F. You would place your vodka and spice mixture into small mason jars, then dunk them in the bath and cook for 4-6 hours. The heat help drives the extraction to create an intense extract in a relatively short period of time. Changing up the spirits used for the tincture can create different characteristics as well. Rum and Bourbon, in particular, can be used to make some really interesting tinctures.

While tinctures pull most of the essential oils from the target spice, they can miss other flavors. This is where tisanes can come in handy. Tisanes can pull out other essential oils that may not be pulled out by a tincture. To make a tisane, you would typically bring 6 oz. of water to a boil and then add roughly an ounce of your crushed spice. Let cool and then filter the spice out.

Cinnamon is a perfect example of how tinctures and tisanes can bring out different qualities of the same spice. If you were to make both a tincture and tisane, then taste the two side by side, you'd easily notice an immense difference between the two. The tincture pushes cinnamon heat and burn of cinnamaldehyde (that intense nose searing, taste bud tingling sensation - often associated with a fresh bottle of Fireball). The tisane on the other hand is softer and earthier, with more woody notes. Blending the tincture and tisane together actually presents the whole flavor we expect from cinnamon (also known as cassia).

### To Titrate Or Not To Titrate

Titration is simply figuring out how much flavoring to put into a beer post-fermentation. Sure, you can guess how much flavoring to add, but you'd be hard pressed to recreate that same beer again if you really liked it. Titration is a straightforward process and can be a lot of fun as well! There's a few things you'll want to have on hand to start with: a small measuring cup, pipettes (or a syringe with measurement markings for this non-mad scientist types), and a small spoon or some other device to mix with. To start your titration, pour a 4 oz. sample of the finished beer (ideally you'd do this into four or more containers at the same time to sample each titration side by side to determine which you like best). Then add a different, measured amount of flavoring to each glass and taste. When you decide which titration you like best, you'd simply scale that amount up to the batch size (Oh no, math)!

Here's a quick look at a 4 sample titration:  
Glass 1: 4 oz. of beer, 1 mL of flavoring  
Glass 2: 4 oz. of beer, 2 mL of flavoring  
Glass 3: 4 oz. of beer, 4 mL of flavoring  
Glass 4: 4 oz. of beer, 6 mL of flavoring

If, using the example to the left, you decide that Glass 2 is the taste you want, you now know that you'll need 0.5 mL of flavoring per ounce of beer left. If you had 5 gallons remaining (640 oz.), you'd need 320 mL (640 oz. X 0.5 mL) of flavoring to achieve the same flavor as the trial titration.  
See! That's easier than you thought it'd be, right?

# Intro To Brewing With Spice



## Spicing It Up In The Brew Room (Cont.)

### It's Gettin' Spicy In Here

#### Kettle Additions

Spices used for kettle flavorings are usually added during the last five minutes of the boil or during a hot whirlpool. That helps to preserve the spice's flavor and aroma. The big question with this method is how much to add. Since you can't taste the spice's effect, it's probably best to go a little lighter than you think it should be. If you're using strongly flavored spices, extra caution is needed. You don't want to cross the line from "that's a nice lavender flavor" to "all I taste is grandma's soap!" Adding spices to the boil kettle will involve some trial and error.

This is where good note taking is really important!

So which spices work well being added to the kettle? Cinnamon or peppercorns are two great choice for the kettle. Resinous spices like rosemary also work well with heat extraction. While not a spice, fruit zest, like orange, lemon, or lime, are often added to the kettle; but those depend on what kind of fruit character you want in the finished beer. Putting the zest in the kettle will give you a more integrated, but muted, flavor and aroma than adding them to the fermenter.

#### Fermenter Additions

For a more forward/intense flavor or aroma, adding spices to a secondary fermenter is the way to go. Even if you don't use secondary fermenters, adding flavorings is one place where it's warranted. While you could put the spices directly in the primary, if crushed spices are not bagged and suspended they can end up sinking to the bottom and getting covered in trub which will limit the effectiveness. Adding in tinctures or tistanes to the secondary is another way to add the flavors of the spices to the beer without having to worry about keeping the crushed spice pieces from being picked up during packaging. When adding a tincture that used a liqueur with residual sugar, it's important to factor in the likelihood that the additional sugar will likely kick up a new fermentation and give yourself some fermenter space. The renewed fermentation will also scavenge oxygen that may have been picked up when you transferred to secondary.

#### Packaging Additions

Packaging is probably the best time to add flavorings that you've created from tinctures and tistanes. Liquid flavorings work best at this stage since additives like coffee, vanilla, or liquor are easy to dose at packaging. Not only do you get the most intense flavor and aroma that way, but you also have the advantage of adding them to suit your own taste. You can avoid playing the guessing game of how much to use by using the titration method and then scaling up for your finished batch size. Just note that if the flavoring contains sugar and you are bottling, the additional sugar should be calculated in with your priming sugar.

## You Feelin' Spicy Yet?

### Some General Guidelines for Brewing with Selected Herbs and Spices

Below is a quick overview of some herbs and spices commonly used in brewing, along with some suggestions on how you can incorporate them into your beers. Don't forget to do your own personal experimentation too!

#### Herbs (Not That Kind, Well, Maybe)

A good general starting point for adding herbs to beer is to start by adding 1 oz to the secondary per 5 gallons. Be sure to remove all traces of the stem as it may contribute a vegetable character to the beer. Wash the herbs in a salad spinner, but do not boil them. When considering adding herbs to your beer, look to add varieties of herbs that complement the beer. The Italian large-leaf varieties of basil, for example, are no good in beer. Thai or Mexican spices are better choices as they have a citrus component that marries well with honey and Cascade hops. Avoid green coriander berries, unless you want a very intense coriander flavor. Fresh herbs are better than dried and are the first choice in most cases.

#### Chilis (Crankin' Up The Heat In Here)

Habanero, Serrano, and Jalapeno chilis work well in beers. Before adding to the fermenter, cut the chilis in half lengthwise, then put them in a colander and pour boiling water over them to sanitize. The chilis should not be cooked, but should remain crisp. As many as 50 chilis can be placed in a secondary fermenter for a 5 gallon batch depending upon how hot the chilis are and how hot you want the beer. 50 chilis work out to about one chili per bottle. Bottle or rack after two weeks. This method gives good pepper flavor and not too much heat. For a hotter chili beer, either use more chilis or allow the beer to sit in the secondary longer than two weeks, tasting every week or so to monitor the heat.

#### Ginger (The Spice, Not The Redhead)

Ginger is best added to beer by steeping some ginger late in the boil and then adding fresh chopped ginger to the secondary. Be careful not to overdo it, though, as adding too much could result in an unpleasant hotness. For a mild ginger taste, try using two quarter-sized slices. For more pronounced flavor, use one "knob" of ginger. For immense, in-your-face flavor, use a ginger root about the size of your hand. One or two dried red chilis in a 5-gallon batch can make a nice complement to the ginger hotness.

#### Other Various Spices (So Much Spice, So Little Time)

Many other spices can be used in the brewing process. Saffron, dried red chilis, or Mexican cinnamon (known as canela) work well with homemade cider and perry in particular. Add them in an infusion by putting the spices in a 3-in. tea infuser ball to make a tistane and putting the resulting tea and the spice ball in the secondary. Some spices are easy to overdo in beer. When using the following spices, keep them to a very small amount (say ½ tsp or less): allspice, cloves, cardamom, cinnamon stick. It's important to remember that you can always add more to increase the strength of the flavors, but you can't subtract back if the flavor is too strong.

